REMARKS

In paragraph 2 of the Office Action, claims 25-35 were objected to as being in improper form because a multiple dependent claim cannot depend from other multiple dependent claims.

Reconsideration is requested.

Claim 25 is dependent on ''any of claims 20, 21 or 24''. Claims 20, 21 and 24 are not multiple dependent claims nor are they dependent on any other multiple dependent claims. As provided in 37 CFR§1.75, claim 25 refers to the prior claims in the alternative. Claims 26, 27, 30, 34 and 35 are in proper multiple dependent form. Claims 28, 29 and 31-33 are dependent claim that are properly dependent on multiple dependent claims. For these reasons, it is requested that these claims be examined on the merits.

In paragraph 3 of the Office Action, Claims 2, 5 and 20-24 were rejected under 35 U.S.C.§112, second paragraph for failing to particularly point out and distinctly claim the subject matter that the applicant regards as the invention.

Reconsideration is requested.

Each of claims 2, 5, 20, 21 and 24 have been amended to avoid the basis for the rejection under 35 U.S.C.§112, second paragraph. In particular, claim 2 has been revised to point out that the polyurethane is formed from the isocyanate compound. Claims 5 and 24 have been revised to clarify the language of the claims point out that esters are esterified with the alcohols. The

word obtainable has been deleted from claim 20. For these reasons, it is requested that this ground of rejection be withdrawn.

In paragraph 5 of the Office Action, claims 1-24 were rejected under 35 U.S.C§103(a) as being unpatentable over Balazs et al. in view of WO/95/25751 and Halpern et al.

Reconsideration is requested.

Claims 1 and 20 have been amended to delete the expression ''the sulphated hyaluronic acid or'' and claims 3 and 22 which related to sulphated hyaluronic acid bound to polyurethane have been deleted. In addition, Claim 1 has been amended to point out that a ''compound'' is being claimed in order to distinguish the present invention from the modified polyurethane surface of the prior art. Support for this term is found in the specification at page 2, line 15.

The Balazs et al. patent makes no reference to the compounds which are covalently bonded hyaluronic acid derivatives disclosed by the applicants. Only the bonding of hyaluronic acid to a polyurethane surface is mentioned. The Examiner has urged that Example 3 of Balazs et al. discloses the covalent bonding of hyaluronic acid to polyurethane and the use of such materials in medical applications.

Example 3, col. 2, line 55 of Balazs et al. states that a polyurethane film is coated with a solution of hyaluronic acid sodium salt, so that ''incorporation of Na-HA occurred by covalent bonding to the polyurethane surface'' (see Balazs et al., col. 3, lines 8-10).

On the contrary, the present polyurethane covalently bound to sulphated hyaluronic acid is obtained by reacting the

hyaluronic acid derivative with a polyurethane solution (see present application as originally filed, Examples 1-3, 6 and 7). The use of a solution of a polyurethane to obtain the covalently bound hyaluronic acid derivative is pointed out in applicants claim 20.

Therefore, according to the present invention, the resulting polyurethane is modified by incorporation of the hyaluronic acid derivative not only on the surface but also in bulk, thanks to the fact that the reaction occurs between the two reagents in solution.

The polyurethane resulting from Balazs et al. Example 3 is on the contrary modified only on the surface, because the reaction occurs between a hyaluronic acid solution and a polyurethane film.

The difference between the two resulting materials makes the claimed material unobvious over the Balazs et al. material: in fact, the amount of hyaluronic acid derivative bound to the surface in the Balazs et al. patent is low, whereas it is greatly increased through a bulk modification.

In fact it has been found by the applicants that the hydrophilic component (the hyaluronic acid component) of the claimed polyurethane, when placed in a hydrophilic environment, migrates to the surface, and thus increases its concentration at the biological system / material interface.

Example 11 at page 17 of the present application states: ''The anticoagulant activity occurs on the side of the film which is in contact with the glass because the polar environment causes the sulfated hyaluronic acid group to be exposed on the surface, while different results are observed on

the side of which is in contact with the air''. These results rebut any inference that the claimed compound of the invention is made obvious by the modified surfaces of the prior art.

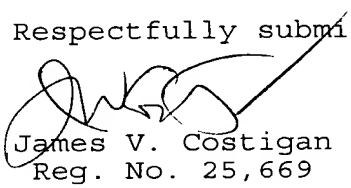
These results could not have been predicted from Balazs et al., either alone or in combination with WO/95/25751 and Halpern et al., wherein no reference is made to the bulk modification of polyurethane or similar polymers by covalently binding a polyurethane to sulfated hyaluronic acid

Halpern et al., are only concerned with the modification of the plastics therein described which occurs only on the surface. For these reasons, it is requested that this ground of rejection be withdrawn.

New claim 36 points out preferred embodiments of the article claimed in claim 35. Claims 37 and 38 point out a preferred molecular weight of the polyurethane in accordance with the disclosure at page 4, line 30.

An early and favorable action is earnestly solicited.

Respectfully submitted



James V. Costigan
Reg. No. 25,669

Hedman & Costigan
1185 Avenue of the Americas
New York, NY 10036
(212)-302-8989

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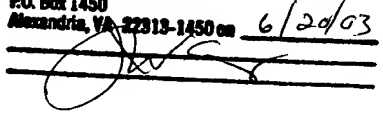

Marked Up Copy of Amended Claims

1. (amended) A compound which consists of polyurethane bound covalently to [a sulphated hyaluronic acid or] a sulphated hyaluronic acid derivative.

2. (twice amended The polyurethane according to claim 1, wherein the said polyurethane [comprises the repeating unit] is formed starting from 4,4'-methylenebis (phenyl isocyanate).

5. (twice amended) The polyurethane according to claim 4, wherein the hyaluronic acid derivatives used to prepare the said sulphated hyaluronic acid derivatives A_2 and B_2 are selected from the group consisting of :

- the partial esters of hyaluronic acid containing at least one free carboxylic function and the remaining carboxylic function esterified with alcohols of the [an] aliphatic, aromatic, arylaliphatic, cycloaliphatic, or heterocyclic series, and
- the partial crosslinked esters containing at least one free carboxylic function and the remaining carboxylic functions are esterified with the alcoholic function of the same hyaluronic acid molecule or of a different hyaluronic acid molecule,
- the partial crosslinked esters containing at least one free carboxylic function reacted with an [polyalcohol of the] aliphatic, aromatic, arylaliphatic, cycloaliphatic or heterocyclic polyalcohol, and wherein crosslinking is thereafter generated by means of spacer chains.

20. (amended) A compound which consists of a polyurethane bound covalently to sulphated hyaluronic acid [or to a sulphated hyaluronic acid] derivative obtain[able]ed by a process comprising supplementing a polyurethane solution with a salt of the said sulphated hyaluronic acid or of sulphated hyaluronic acid derivative, or with a solution thereof.

21. (amended) The polyurethane according to claim 20, wherein the said polyurethane [comprises the repeating unit] is formed starting from 4,4'-methylenebis (phenyl isocyanate).

24. (amended) The polyurethane according to claim 23, wherein the hyaluronic acid derivatives used to prepare the said sulphated hyaluronic acid derivatives A_2 and B_2 are selected from the group consisting of:

- the partial esters of hyaluronic acid containing at least one free carboxylic function and the remaining carboxylic function esterified with alcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series [alcohol], and
- the partial crosslinked esters containing at least one free carboxylic function and the remaining carboxylic functions are esterified with the alcoholic function of the same hyaluronic acid molecule or of a different hyaluronic acid molecule,
- the partial crosslinked esters containing at least one free carboxylic function reacted with an aliphatic, aromatic, arylaliphatic, cycloaliphatic or heterocyclic polyalcohol, and wherein crosslinking is thereafter generated by means of spacer chains.